This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (previously presented): A near field optical apparatus comprising:

a light source;

a conductive layer defining a subwavelength aperture therein, said aperture having a perimeter;

said conductive layer having at least one protrusion extending into said aperture at said perimeter, wherein said protrusion into said aperture is of sufficient size to produce a transmission mode with very high throughout.

Claim 2 (previously presented): The near field apparatus of claim 1, wherein said protrusion defines first and second regions in said aperture, said protrusion located between said first and second regions.

Claim 3 (previously presented): The near field apparatus of claim 2, wherein said first and second regions are elongated in a direction which is substantially parallel with a polarization direction of source light.

Claim 4 (canceled)

Claim 5 (previously presented): The near field optical apparatus of claim 1, wherein said conductive plane includes first and second protrusions extending into said aperture, said first and second protrusions located on substantially opposite sides of said aperture.

Claim 6 (previously presented): The near field optical apparatus of claim 3, wherein said first region comprises a first slot, said second region comprises a second slot, and said protrusion further defines a connecting region joined to said first and

second slots.

Claim 7 (previously presented): The near field optical apparatus of claim 1, wherein said protrusion is electrically isolated from said conducting plane.

Claim 8 (previously presented): The near field optical apparatus of claim 5, wherein said first and second protrusions are electronically isolated from said conducting plane.

Claim 9 (previously presented): A near field optical apparatus, comprising:

(a) a light source;

(b) a conductive plane proximate to said light source, said conductive plane having a subwavelength aperture therein positioned such that light from said light source passes through said aperture;

(c) said conductive plane including at least one protrusion which extends into said aperture, wherein said protrusion into said aperture is of sufficient size to produce a transmission mode with very high throughput.

Claim 10 (previously presented): The near field apparatus of claim 9, wherein said protrusion defines first and second regions in said aperture, and a localization aperture located between said first and second regions proximate said protrusion.

Claim 11(previously presented): The near field apparatus of claim 10, wherein said first and second regions are elongated in a direction which is substantially parallel with a direction of polarization of said light source.

Claim 12 (canceled)

Claim 13 (previously presented): The near field optical apparatus of claim 9, wherein said conductive plane includes first and second protrusions extending into said aperture, said first and second protrusions located on substantially opposite sides of

said aperture.

Claim 14 (previously presented): The near field optical apparatus of claim 11, wherein said first region comprises a first slot, said second region comprises a second slot, and said protrusion further defines a connecting region joined to said first and second slots, said connecting region defining a localization aperture.

Claim 15 (previously presented): The near field optical apparatus of claim 9, wherein said protrusion is electrically isolated from said conducting plane.

Claim 16 (previously presented): The near field optical apparatus of claim 13, wherein said first and second protrusions are electrically isolated from said conducting plane.

Claim 17 (previously presented): The near field optical apparatus of claim 9, wherein said light source is a semiconductor laser, and said conductive plane is a metal layer proximate to an emission facet of said semiconductor laser.

Claim 18 (previously presented): The near-field apparatus of claim 17, wherein said semiconductor laser further comprises:

(a) a laser active region;

(b) a first reflective region adjacent a first side of said active region; and

(c) a second reflective region adjacent a second side of said active region;

(d) said metal layer positioned adjacent an outer surface of said first reflective region.

Claim 19 (previously presented): A semiconductor laser apparatus comprising a light source and an emission facet having a conductive surface, said conductive surface having a subwavelength aperture therein, said conductive surface including at least one protrusion extending into said ap rture, wher in said protrusion into said aperture is of sufficient size to produce a transmission mode with very high throughput.

Claim 20 (previously presented): A near field optical apparatus comprising a light source and a conductive plane having a subwavelength aperture therein, said aperture including a plurality of spaced apart slots, and at least one connector region joined to each adjacent said spaced apart slot, wherein said slots of said aperture are of sufficient size to produce a transmission mode with very high throughput.

Claim 21 (previously presented): The near field optical apparatus of claim 20, wherein said aperture comprises:

(a) a first slot of Length L_1;

(b) a second slot Length L_2; and

(c) at least one connector region of width W, said connector region joined to said first slot and said second slot.

Claim 22 (previously presented): The near field optical apparatus of claim 21, wherein said length L_1 of said first slot is equal to said length L_2 of said second slot.

Claim 23 (previously presented): The near field optical apparatus of claim 21, wherein said first and second slots each have a width equal to said width W.

Claim 24 (previously presented): The near field optical apparatus of claim 21, wherein said connector region is centrally located with respect to said first and second slots.

Claim 25 (previously presented): The near field optical apparatus of claim 21, wherein said connector region is asymmetrically located with respect to said first and second slots.

Claim 26 (previously presented): The near field optical apparatus of claim 23, wherein said length L_1 of said first slot is greater than said width W, and said length L_2 of said second slot is greater than said width W.

Claim 27 (previously presented): The near field optical apparatus of claim 23, wherein length L_1 of said first slot is equal to said width W, and said length L_2 of said second slot is equal to said width W.

Claim 28 (previously presented): The near field optical apparatus of claim 24, wherein said first slot includes a first end, said second slot includes a first end, and said connector region is positioned adjacent said first ends of said first and second slots.

Claim 29 (previously presented): The near field optical apparatus of claim 24, wherein aperture comprises a first connector region and a second connector region, said first slot includes a first end and a second end, and said second slot includes a first end and a second end, said first connector region positioned adjacent said first ends of said first and second slots, said second connector region positioned adjacent said second ends of said first and second transverse slots.

Claim 30 (previously presented): A semiconductor laser apparatus, comprising:

(a) a laser active region;

(b) a first reflective region adjacent a first side of said active region;

(c) a second reflective region adjacent a second side of said active region;

(d) an emission face proximate to said first reflective region, said emission face including a reflective, conductive layer thereon; and

(e) said emission face including a subwavelength aperture extending through said reflective conductive layer and into at least a portion of said first reflective region, said reflective conductive layer including at least one protrusion which extends into said aperture, wherein said protrusion into said aperture is of sufficient size to produce a transmission mode with very high throughput.

Claim 31 (previously presented): The semiconductor laser apparatus of claim 30, wherein said aperture is smaller than a guide mod of said s miconductor laser.

Claim 32 (previously presented): The semiconductor laser apparatus of claim 30, wherein said first reflective region and said second reflective region each comprises a plurality of distributed Bragg mirrors.

Claim 33 (previously presented): The semiconductor laser apparatus of claim 32, wherein said semiconductor laser includes a first area under said aperture, and a second area surrounding said aperture, said first area under said aperture including a smaller number of said distributed Bragg reflector mirrors than said second area surrounding said aperture.

Claim 34 (previously presented): The semiconductor laser apparatus of claim 33, wherein said first area under said aperture defines a region of lower reflectivity and said second region surrounding said aperture defines a region of higher reflectivity.

Claim 35 (previously presented): The semiconductor laser apparatus of claim 30, further comprising a semiconductor contact layer positioned between said reflective conducting layer and said first reflective region.

Claim 36 (previously presented): The semiconductor laser apparatus of claim 35, further comprising an oxide layer positioned between the reflective conducting layer and said semiconductor contact layer.

Claim 37 (previously presented): A semiconductor laser comprising:

(a) a laser active region;

(b) an first conductivity type upper reflective region adjacent an upper side of said active region;

(c) a second conductivity type lower reflective region adjacent a lower side of side active region; and

(d) an emission facet adjacent said upper reflective region, and emission facet having a subwavelength aperture therein, said aperture smaller than a guide mode of said semiconductor laser, said upper reflective region having at least one

protrusion extending into said aperture, wherein said protrusion is of sufficient size to produce a transmission mode with very high throughput.

Claim 38 (previously presented): The semiconductor laser of claim 37, further comprising a reflective conductive layer on said emission facet.

Claim 39 (previously presented): The semiconductor laser of claim 38, further comprising a semiconductor contact layer located between said reflective conducting layer and said first conductivity type upper reflective region.

Claim 40 (previously presented): The semiconductor laser of claim 39, further comprising an oxide layer located between said reflective conducting layer and said semiconductor contact layer.

Claim 41 (previously presented): The semiconductor laser of claim 37, further comprising a first, lower reflectivity area under said aperture, and a second, higher reflectivity area surrounding said aperture.

Claim 42 (previously presented): The semiconductor laser of claim 41, wherein said first conductivity type upper reflective region comprises a plurality of p-doped quarter wave layer pairs, and said second conductivity type reflective region comprises a plurality of n-doped quarter wave layer pairs.

Claim 43 (previously presented): The semiconductor laser of claim 42, wherein said first, lower reflectivity area under said aperture includes a smaller number of p-doped quarter wave layers than said second, higher reflectivity area surrounding said aperture.

Claim 44 (previously presented): The semiconductor laser of claim 38, wherein said reflective conductive layer includes at least one protrusion which extends into said aperture.

Claim 45 (previously presented): The near field optical apparatus of claim 1, wherein said aperture generally forms a C shape.

Claim 46 (previously presented): The near field optical apparatus of claim 1, wherein said aperture generally forms an H shape.

Claim 47 (previously presented): The near field optical apparatus of claim 1, wherein for said subwavelength aperture the wavelength of light of said light source is greater than the width of said aperture.

Claim 48 (previously presented): The near field optical apparatus of claim 1, wherein for said subwavelength aperture the wavelength of light of said light source is greater than half the width of said aperture.

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The Commissioner is hereby authorized to charge payment of any required fees associated with this Communication or credit any overpayment to Deposit Account No. 04-1175.

Respectfully submitted,

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